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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,742	12/20/2001	Sameer D. Mehta	88-1061A	3797

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EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 03/26/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/027,742

Applicant(s)

MEHTA ET AL.

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 17 is/are rejected.
- 7) ☒ Claim(s) 15, 16 and 18-20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1713

4. Claims 1-4, 6, 7, and 9 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wang *et al.* (*Polymer* 2001).

The prior art of Wang *et al.* teaches polyethylene/clay nanocomposite materials containing LLDPE (ethylene/ α -olefin copolymer) base resin, organophilic clay, and maleic anhydride modified polyethylene (labeled PEMA) as compatibilizing agent. Montmorillonite clay is modified with dimethyl dihydrogenated tallow ammonium ions. Tallow contains about 65 % C₁₈ chains. PEMA contains 0.85 % grafted maleic anhydride (see Experimental section). The experiments corresponding to Figure 6 relate disclose a composition containing LLDPE; 5 wt % PEMA, and 5 wt % clay containing dimethyl dihydrogenated tallow ammonium ion. The constitution of the prior art composition is essentially the same as that recited in the present claims.

The reference does not disclose the melt index of PEMA, however, the broad range of 0.25-40 g/10 min is unexceptional, and it is obvious to the skilled artisan that such a material has a melt index of at least 0.24 g/10 min. Also, Wang *et al.* does not provide melt index and complex viscosity ratio measurements of the overall composition. However in view of the fact that the prior art composition and that described in the present claims are essentially the same, a reasonable basis exists to believe that the composition of Wang *et al.* also exhibits the rheological properties presently claimed. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

declaration 37 CFR 131
reduces to practice
prior to publication
date of invention

5. Claims 10-13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 5,717,000 to Karande *et al.*

Karande *et al.* teaches a composition comprising organophilic clay dispersed in an olefinic polymer having polar functionality (claim 1). The organophilic clay, Claytone HY, is montmorillonite intercalated with dimethyl dihydrogenated tallow ammonium ions (claims 4 and 5, col. 6, lines 37-39). The olefinic polymer is ethylene-vinyl acetate copolymer (claim 13) such as Escorene polymers (col. 4, line 34) which contain about 6-18 wt % of vinyl acetate units. The compositions shown in the examples contain about 4.5 wt % of clay material. The reference is silent with respect to melt index and complex viscosity ratio measurements of the overall composition. However in view of the fact that the prior art composition and that described in the present claims are essentially the same, a reasonable basis exists to believe that the composition of Karande *et al.* also exhibits the rheological properties presently claimed. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

6. Claims 1-5, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Karande *et al.*

The discussion of the prior art in the previous paragraph is incorporated here by reference. The composition anticipates claims 1, 5 and 8 in the case where the ethylene copolymer component (a) is identical to the compatibilizing agent (c). The claims encompass such an embodiment, because the identity of (a) is generic, and based on the disclosure of the

Art Unit: 1713

x claim 2 amended
to exclude this
option

application, it includes ethylene-vinyl acetate copolymers. The reference is silent with respect to melt index and complex viscosity ratio of the overall composition. However in view of the fact that the prior art composition and that described in the present claims are essentially the same, a reasonable basis exists to believe that the composition of Karande *et al.* also exhibits the rheological properties presently claimed. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

7. Claim 10 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,521,690 to Ross *et al.*

Ross *et al.* teaches a composition comprising smectite clay which has been ion exchanged with a quaternary ammonium compound such as 2M2HT (dimethyl dihydrogenated tallow ammonium) and one or more thermoplastic polymers (claims 1-3). The thermoplastic polymer is an ethylene-vinyl acetate copolymer (claim 7). The composition contains up to 40 wt % of modified clay (claim 2).

8. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ross *et al.* in view of Karande *et al.*

maybe??

Ross *et al.* does not specify the comonomer content of said ethylene-vinyl acetate copolymer. Karande *et al.* discloses nanocomposite compositions in which the base polymer is an ethylene-vinyl acetate copolymer such as Escorene polymer, which contains about 6-18 wt % of vinyl acetate units. This lies well within the broad range of 2-48 wt % recited in the present claims. One having skill in the art would find it obvious to use the EVA polymers described in

Art Unit: 1713

Karande *et al.* for the composition of Ross *et al.* because compositions containing ethylene-vinyl acetate copolymers and 2M2HT-modified clays have been adequately disclosed in the prior art. Therefore, one having ordinary skill in the art would expect such an embodiment to work with a high expectation of success. *In re O'Farrell*, 7 USPQ 2d 1673 (Fed. Cir. 1988).

Neither reference discusses the melt index and complex viscosity ratio of the overall composition. Despite this, one having skill in the art would have reasonable basis to believe that the composition of Ross *et al.*, which contains EVA copolymer taught in Karande *et al.*, also exhibits the rheological properties presently claimed. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

9. Claims 1-5, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ross *et al.*

The discussion of the prior art of Ross *et al.* from paragraph 7 of this office action is incorporated here by reference. The composition anticipates claims 1, 5 and 8 in the case where the ethylene copolymer component (a) is identical to the compatibilizing agent (c). The claims encompass such an embodiment, because the identity of (a) is generic, and it includes ethylene-vinyl acetate copolymers. The reference is silent with respect to melt index and complex viscosity ratio of the overall composition. However in view of the fact that the prior art composition and that described in the present claims are essentially the same, a reasonable basis exists to believe that the composition of Karande *et al.* also exhibits the rheological properties

Amendment
excludes
this
possibility

presently claimed. Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02.

10. Claim 14 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,462,122 to Qian *et al.*

Qian *et al.* discloses a nanocomposite concentrate composition comprising about 10-90 wt % of layered silicate intercalated with an onium compound and 10-90 wt % of a matrix polymer comprising 94-99.5 wt % of polyolefin oligomer and 0.5-6 wt % of maleic anhydride modified polyolefin (claims 4 and 7). The matrix polymer is polyethylene or an ethylene copolymer (claim 8). A smectite clay such as montmorillonite which has been ion exchanged with octadecylamine can be used for the compositions of the invention (*i.e.*, Example 1).

11. Claim 14 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. 2001/0033924 to Qian *et al.*

Qian *et al.* discloses a nanocomposite concentrate composition comprising about 10-90 wt % of layered silicate intercalated with an onium compound and 10-90 wt % of a matrix polymer comprising 94-99.5 wt % of polyolefin oligomer and 0.5-6 wt % of maleic anhydride modified polyethylene (claims 1 and 6). The matrix polymer is polyethylene, ethylene copolymer, or ethylene-vinyl acetate copolymer (claim 15). A smectite clay such as montmorillonite which has been ion exchanged with octadecylamine can be used for the compositions of the invention (*i.e.*, Example 1).

Art Unit: 1713

Allowable Subject Matter


12. Claims 15, 16, and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (703)306-0094. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (703)308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703)746-7064. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

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March 18, 2003


DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700